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ABSTRACT

This is the final report of a project designed to study developmental trends in young children's preferences in art. Individualized research procedures, adapted for use with pre-school age children, are described. Stimulus materials for the study include pairs of photographic prints of works of art, pairs of designs contrasting in regularity, and pairs of polygons differing in degree of complexity. These materials were chosen to represent distinct trends in development in school children's preferences as determined in an earlier study. The research findings are summarized. Comparison of the findings is made with data on a small sample of children from Japan. (SHM)

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FINAL REPORT
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RESPONSES OF CHILDREN TO ART

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PREFACE

We are grateful to the various schools and other organizations that generously permitted us to seek the cooperation of children and parents in this study. We are especially grateful to Rosaline S. Schwartz who, in addition to interviewing children, played a major role in the preliminary review of earlier findings and selection of materials for this research, and to the following additional assistants who interviewed children: Dorothy Klyce, Judy Morris, Barbara Renkin, Anne Schwartz, Doris Shiffman, and Mary White.

SUMMARY

When asked, in previous studies of children's preferences, to choose between two works of art experts consider to differ in esthetic quality, elementary-school children were generally found to have less decided preferences than secondary-school children. In some particular pairs of pictures, however, a more decided preference--sometimes for the esthetically better work, sometimes for the poorer--was found in the elementary schools than in the secondary schools. And in still other pairs, a preference for the one or the other work was fairly constant in magnitude throughout the school years studied.

The present research is an exploration of the early part of these developmental trends, extending their study to younger children. The earlier research depended on group procedures administered in the classroom; these procedures can not be relied on with all children of the first grade, and are not applicable to pre-school children. To explore the younger ages, group procedures must be replaced by individual procedures, and because the research thus becomes much more costly the exploration is on a restricted scale. Our exploration uses six sets of pairs, chosen to represent distinct developmental trends in school children's preferences as determined in the earlier study.

Of special interest are the two sets for which in the previous study preference had been most pronounced at the earliest age studied. In Set 1 the elementary-school children strongly preferred the better picture, and in Set 5 they strongly preferred the poorer picture; both preferences tended to disappear or even be reversed in secondary school. When procedures were used that are applicable to younger children, would the results correspond to an extrapolation of the previous findings, the preference found for each set being even stronger in pre-school children? We did not find this to be true. For each set, the preference expressed by elementary-school children was found in our pre-school children also. But the preference was not particularly strong in our present data. (Both the change of procedure, and the possibility of the statistical artifact known as regression effect, make useless precise comparison between the results of this study and of the previous one.) More importantly, there was no indication that within our present data these preferences were strongest at the earliest ages.

Next in interest are the sets where the earlier study had indicated that a strong preference is maintained consistently throughout the years of elementary and secondary school. In Set 3, the poorer work had been consistently preferred, and in set 4 the better work. Using a procedure adapted to younger children, would we find that these preferences are strongest at the earliest ages? We did not. In Set 3, where the poorer works are preferred in all the school grades we studied earlier, the poorer works are found to be preferred by our present subjects also. But during the years from 3 to 7 we find the rejection of the better work, or preference for the poorer, to be gaining rather than losing strength; the peak of preference for the poorer work is

certainly not found at the youngest age we have studied. In Set 4, where the better works had been preferred in the previous study, the outcome is similar; that is, the preference is weaker at the earliest ages we are now studying than at the later ages. For some of the pairs of Set 4, in fact, preference for the better work seems to be completely absent at the ages of 3 or 4.

Finally, we have two sets of pairs where the previous study had indicated indifference among the younger grade-school children, giving way with increasing age to a strong preference for the poorer work in Set 2, and to a strong preference for the better work in Set 6. In the present study, using procedures better adapted to young children, we find in Set 2 that at all ages our American children share to some extent the older children's preference for the poorer work. In Set 4, in some pairs the youngest children in the present study show genuine indifference, but in others they show actual preference for the poorer work, despite the strong preference of older children for the better.

In general, younger children show more tendency to foreshadow older children's preference when that preference is for the esthetically poor than when it is for the etthetically good. In neither case, however, is children's preference at a peak at the ages of 3 and 4.

In their response to works of art, then, our evidence suggests that agreement among children, when it appears, is an outcome of gradual developmental processes through which children become able to grasp important and often complex aspects of the art, and then may resemble each other in their feelings about these aspects. Agreement in response to works of art does not appear to be a product of innate human nature, greater in degree the less that innate human nature has been distorted by pressures from the environment.

Our smaller exploration of preferences in response to two sets of non-art stimuli suggests similar results for the particular sets of stimuli we chose to work with. Preferences are not very decided at the youngest ages we considered, and tend to become more marked with increasing age. Here too there seems to be no strong preference tendency set by innate human nature, and marked agreement--where it appears at later ages--seems likely to be an outcome of complex developmental processes.

The comparison between U.S. and Japanese data suggests general similarity, though there are suggestions of differences which might prove stable if explored further with larger samples.

I. INTRODUCTION

In previous research of ours (Child, 1964), art preferences of children in grades 1 through 12 were ascertained through procedures administered in groups, each child responding on his own record sheet to pictures projected in front of a group. Those procedures are not applicable to children younger than about 6 years, and to only part of the children aged 6 or 7. The present study is an exploration of preferences of children at younger ages, down to 3 years, in response to some of the same stimuli presented to each child individually as photographic prints. The nature of the stimuli, and the findings of the earlier research, will be presented in Chapter II.

At the same time, we have also explored the preferences of the same younger children in response to two other kinds of visual materials on which comparisons with preferences at later ages might be of interest, though no such full information is presently available: pairs of polygons differing in complexity, and pairs of simple drawings differing in regularity. Again, the stimuli and the earlier research will be described in Chapter II.

Since the differences in procedures might in themselves lead to differences in finding, we have in the present study applied our new procedures to determine the preferences not only of pre-school children but also of comparison groups corresponding in age to some of the youngest children previously studied (7 and 8 years of age, approximately corresponding to second and third grade).

The research was done principally with children in the vicinity of New Haven, Connecticut; it includes, however, comparative data on a small sample of children in the vicinity of Tokyo, Japan.

II. METHODS

MATERIALS

The stimulus materials for the study consisted of a number of pairs of visual stimuli, all mounted in a single photograph album. We had several copies of the materials, mounted in separate albums, to permit simultaneous work by several interviewers in different locations. Each album page was covered with transparent plastic, so that children who pointed or reached toward the stimuli did not need to be restrained for fear of damage to the materials.

The pairs consisted of 27 pairs of photographic prints of works of art, 6 pairs of designs contrasting in regularity, and 8 pairs of polygons differing in degree of complexity.

Pairs of works of art

Of the 27 pairs of works of art, 14 were black-and-white photographic prints, and 13 were colored photographic prints. Each pair was based on one of the pairs of slides used in our earlier research, but the prints were not made from the slides; they were made by photographing the same source material--usually an illustration in a book or magazine. Graduate students in art or art history, or older people with similar background, had originally put together each pair with the following intent: to select two works of art similar in type, style, or subject matter, with one being in the opinion of the selector a decidedly better work of art. Some of the selectors, and other people of similar background, were shown the pairs as projected slides and asked to judge which was the better work; the pairs we kept for use were only those on which 14 judges agreed with the original selector, either unanimously or with only 1 or 2 disagreements. We will speak of the two members of a pair as the better work of art and the poorer work of art, and we mean by that the operational definition of *better* and *poorer* provided by the procedures of selection and expert judgment just described.

Over 900 of these slide pairs had been shown to groups of school children, from grades 2 through 12, with each asked to indicate which picture in each pair he liked better. The responses had been used principally in two ways: (1) to chart changes with age in the general tendency for children's art preferences to agree or disagree with expert judgment of esthetic quality; (2) to determine the stimulus correlates of children's art preferences. The first of these purposes, the study of age changes in art preferences, is the one we are following up here. (Adequate pursuit of the second purpose would require a larger sample of stimuli than the resources of this study could permit. Our discussion will include, however, some speculation about stimulus correlates.)

For the average pair, out of the many pairs we used in the earlier study, it is possible to state a typical course of change with age. Younger children, from grade 1 through approximately grade 7, tend to disagree with expert judgment, that is to prefer the work of art experts consider to be the poorer of the pair, by a fairly steady proportion; for the average pair, about 60% of these children prefer the poorer work and 40% the better. From about grade 7 to grade 12, there is a gradual increase in the proportion preferring the other work, until by grade 12 about half the children prefer the work experts consider better. Age changes in preference could also be plotted for individual pairs, and they were found to differ radically from one pair to another.

The 27 pairs we selected for use fall into six sets, distinguished by the preferences or preference changes discovered in the earlier studies of school children. Each set contains from 3 to 5 pairs, according to the availability of pairs illustrating well the preference-pattern defining the set and yet differing sufficiently from other pairs in the set. The information on which we based the selection was quite detailed: graphs of preferential response, grade by grade, for boys and girls separately, from each of several schools. We have provided here in Table 1 (placed on page 18 to facilitate comparison with Table 2) a summary of the information on which the selection was based, averaging across sex and schools but keeping each grade separate. Somewhat different populations are drawn on for elementary schools (grades 1 through 6, junior high schools (grades 7 through 9) and senior high schools (grades 10 through 12), so that discontinuities between these three groups of grades should not be given much weight. The number of children represented varies greatly from one entry to another; it often exceeds 100, but sometimes drops as low as about 20. For this reason, consistency through grades, or of movement from one grade to another, is more important than precise values. To facilitate characterizing each set as a whole, we have entered mean percentage preference for the better work throughout each set. We caution, however, against taking these averages as anything but a rough summary, for in detail the results really differ markedly for the several pairs within a set. We have numbered the individual pairs according to the order in which they were presented to children in the present study.

We find it easier to keep the quantitative results in mind if we express them always by reference to the better work. If a large majority prefer the better work, we speak of preference; if only a small minority prefer the better work, we speak of rejection. We use this terminology, however, only for clarity of quantitative treatment. The children were never led to focus in any special way on the better work; they were just presented with a pair and asked to indicate which one they liked better.

Set 1, Initial Strong Preference Disappearing or Reversing. In the 4 pairs of this set, children in the early elementary-school years had a strong preference for the better work; with increasing age,

children were less inclined to prefer the better work and eventually might even strongly reject it. In one pair (number 17), preference for the better work appears only in the first grade; in the other pairs, preference for the better work continues until later elementary grades. The pairs of Set 1 were as follows:

Pair 10, black and white still life drawings. Better: Henri Matisse, Nature morte au melon, plate 31 in J. Cassou, Le Dessin Francais au XX^{e} Siècle (Lausanne: Mermod, 1951). Poorer: Raoul Dufy, Fruits, plate 67 in same book.

Pair 12, abstract paintings showing large masses of very few colors. Better: Marc Rothko, Number 10, 1950, reproduced from Art News for Summer 1959, p. 32). Poorer: Georg Meistermann. Vertical composition of wine rectangle on beige, in catalog Deutsche Kunst 1959 (Baden-Baden, Staatliche Kunsthalle, 1959).

Pair 17, colored portraits of a woman. Better: James Ensor, La Vieille aux Masques, page 97 in Paul Haesaerts, James Ensor (Bruxelles: Elsevier, 1957). Poorer: Othon Friesz, Portrait of my Mother, page 22 in Maximilien Gauthier, Othon Friesz (Genève: Cailler, 1957).

Pair 25, still life paintings in color. Better: Henri Matisse, Pineapple and anemones, page 112 in The Albert D. Lasker Collection (New York: Simon & Schuster, 1957). Poorer: H. V. Poor, Fruit, page 15 in Peyton Boswell, Jr., Varnum Poor (New York: Hyperion, 1941).

Set 2, Initial Indifference Giving Way to Rejection of the Better Work. In this set of 5 pairs, the younger elementary-school children do not greatly prefer either of the two works over the other; with increasing age, there develops a strong tendency to reject the better work in favor of the poorer. These pairs were made up as follows:

Pair 1, black and white drawings of farm scene. Better: Rembrandt, A farm near Amsterdam (Cleveland Museum of Art). Poorer: J. S. Williams, Hay-time, bottom of page 11 in A. L. Guptill, Freehand drawing self-taught (New York: Harper, 1933).

Pair 7, colored paintings of a woman and a boy on a bench. Better: Edouard Vuillard, The bench, in Vuillard (Paris: Les Editions du Chêne, 1948). Poorer: Raphael Soyer, Doctor's office (colored reproduction of unknown source).

Pair 18, black and white line drawings of a woman. Better: Henri Matisse, Head of a woman (reproduction of unknown source). Poorer: Halicka, Marta Abba (reproduction of unknown source).

Pair 26, two Sienese paintings of Madonna and child, each with two other figures in background. Both reproductions of unknown origin.

Pair 27, colored paintings of a woman. Better: E. Manet, The illustrated paper (reproduction of unknown source). Poorer: J. Lavery, Souvenir of a lost picture (reproduction of unknown source).

Set 3, Consistent Rejection of the Better Work. In this set of 5 pairs, the better work is chosen by only a small minority of children at almost all ages studied in the earlier research. Preference in some pairs shows some regularity in change with age, but this movement is slight enough that rejection of the better work remains clear at all ages, with a couple of minor exceptions. Since the movement with increasing age tends to be in the direction of decreasing rejection of the better work, the boundary between this and Set 5 is, as will be seen, somewhat arbitrary. The 5 pairs of Set 3 are:

Pair 6, colored paintings of a bird. Better: Morris Graves, Blind bird (Art News, Dec. 1-14, 1943). Poorer: A. S. Bussy, Brazilian hangnest (Creative Art, March 1929, vol. 4, p. liv).

Pair 9, black and white reproductions of Japanese paintings of birds. Better: Kano Motonobu, Crane on pine tree (reproduction of painting in Reiun-in, Kyoto). Poorer: Nampu Katayama, The nest, plate 40 in Carlo E. Rava, 43 Pittori giapponesi contemporanei (Milano: Görlich, 1947).

Pair 11, black and white drawings of a woman. Better: J. S. Sargent, Duchess of Marlborough, plate 99 in Charles E. Slatkin and Regina Shoolman, Treasury of American drawings (New York: Oxford, 1947). Poorer: W. Foster, Head of a girl, page 75 in C. M. Price and A. T. Bishop, Art school self-taught (New York: Greenberg, 1952).

Pair 14, black and white photographs of trees. Better: Franz Schneider, Trees in a haze, page 95 in U. S. Camera Annual 1950. Poorer: Eucalypts, page 214 in Displaying Australia and New Guinea (Sydney: Australia Story Trust, 1945).

Pair 21, black and white drawings of a cluster of houses. Better: A. Zaidenberg, Landscape, page 126 in A. Zaidenberg, The joy of painting (Garden City, N.Y.: Hanover House, 1955). Poorer: A. Zaidenberg, Study of houses, page 125 in the same book.

Set 4, Consistent Preference for the Better Work. In this set of 5 pairs, the better work is the choice of a majority of children at all ages studied in the earlier research, and there is no decided

consistency of change with age. The composition of these pairs is as follows:

Pair 2, black and white geometric designs. Better: square design, figure 28 in J. Lang, Geometric designs for artists and craftsmen (New York, Exposition Press, 1959). Poorer: Rectangle design, figure 36 in same book.

Pair 8, two pairs of colored stained glass windows. Better: Simone Martini, Window in the St. Martin Chapel of San Francesco Assisi, middle pair of figure 15 in G. Marchini, Italian stained glass windows (New York: Abrams, 1956). Poorer: Giottesque late master, Central double light in the St. Catherine Chapel of San Francesco Assisi, figure 16 in the same book.

Pair 16, black and white reproductions of drawings or paintings of ballet dancers. Better: E. Degas, Ballet rehearsal (reproduction of unknown source). Poorer: A. Crip, The rehearsal (reproduction of unknown source).

Pair 19, black and white pictures of coffee or tea sets. Better: A. E. Harvey, Silver and ebony tea set, top of page 106 in Decorative Art 1952-53. Poorer: A. Erhard, Silver coffee set with ebony handle, bottom right of page 113 in Decorative Art 1951-52.

Pair 22, black and white reproductions of paintings of women. Better: Henri, The masquerade dress, page 45 in Monroe Wheeler, 20th century portraits (New York: Museum of Modern Art, 1942). Poorer: Speicher, Katherine Cornell, page 91 in same book.

Set 5, Initial Strong Rejection Disappearing or Reversing. In the 5 pairs of this set, the better work is decisively rejected by the youngest children we studied earlier--for some pairs only in the earliest grades, for others through several grades. With increasing age, this rejection diminishes and in some instances is actually reversed, with the older children definitely preferring the better work. These 5 pairs are the following:

Pair 4, colored abstract paintings of mostly circular forms by Delaunay. Better: Discs (Museum of Modern Art, New York). Poorer: Joie de vivre (Nomis Postcard, 6468).

Pair 15, colored photographs of modern colored glass. Better: Tapio Wirkkala, Vase and bowl, page 101 in Giorgio Nicodemi, Vetri d'oggi (Milano, Ulrico Hoepli, 1955). Poorer: Italian, two vases and bowl, page 13 in same book.

Pair 20, colored paintings of entertainers by Pablo Picasso. Better: Two harlequins (reproduction of unknown source). Poorer: Clowns (reproduction of unknown source).

Pair 23, colored paintings of sets of rectangles or squares. Better: Paul Klee, Colour board (Postcard, Fingerle-Karte, 7106). Poorer: Amateur painting made especially for this purpose.

Pair 24, black and white photographs of sand dunes. Better: Edward Weston, Dunes, page 329 in Peter Pollack, The picture history of photography, (New York: Abrams, 1958). Poorer: Brett Weston, White Sands, New Mexico, page 170 in U. S. Camera Annual 1950.

Set 6, Initial Indifference Giving Way to Strong Preference for the Better Work. There are 3 pairs in this set. The youngest children in our earlier study show no very decided preference for either work; with increasing age, there comes sooner or later to be a clear preference for the better work, and this preference increases with age. The 3 pairs of this set are:

Pair 3, colored paintings of haystacks by Claude Monet. Better: Haystacks, 1891, page 86 in Denis Rouart, Claude Monet (New York: Skira, 1958). Poorer: Haystacks at Giverny, 1884, page 22 in William C. Seitz, Claude Monet, seasons and moments (New York: Museum of Modern Art, 1960).

Pair 5, black and white photographs of stairways. Better: Spiral staircase in Offenbach, Stadtbaurat Bayer, top of page 185 in Konrad Gatz and Fritz Hierl, Treppen + TreppenhÄuser (MÜnchen: G. D. W. Callwey, 1954). Poorer: Rectangular staircase with landing, from the same book.

Pair 13, black and white reproductions of portraits of women. Better: Hans Holbein, Catherine Howard (reproduction of unknown source). Poorer: Hans Krell, Portrait of Queen Maria of Hungary (reproduction of unknown source).

Non-Art Stimuli

Patterns Differing in Regularity. This set of materials consisted of six pairs of patterns from a series prepared and used by Berefelt (1969). Using the illustrations in his article as a guide, we constructed the figures afresh with black construction paper and white cardboard, and then had photographic copies prepared in appropriate size. Within a pair, the two patterns are composed of the same set of black squares or rectangles. In one member of a pair, the pattern is made by arranging the pieces in a perfectly or almost perfectly regular way. In the other member, sometimes one piece has been moved to break the regularity; sometimes the pieces are all

rearranged into a radically irregular pattern. Descriptions of the pairs, from which they could be readily identified in Berefelt's article, follow, with the more regular patterns described first.

Pair 28: Regular: 36 small squares arranged to form a slightly imperfect larger square. Irregular: the same squares arranged to resemble a rather poorly made circle.

Pair 29: Regular: 9 thin vertical rectangles, spaced regularly. Irregular: the same rectangles, with some at an angle.

Pair 30: Regular: 4 rectangles of varying size and 9 small squares arranged in a regular pattern. Irregular: the same forms arranged irregularly.

Pair 31: Regular: 36 small squares arranged to form a large square. Irregular: about 36 small squares arranged chaotically.

Pair 32: Regular: 28 small squares, and one square 4 times the size, arranged regularly. Irregular: A few of the small squares removed or changed in position and orientation.

Pair 33: Regular: A long horizontal rectangle in the center; six small squares placed regularly above it and six more below it. Irregular: the 3rd and 4th squares below the rectangle are out of position.

Polygons Differing in Complexity. The forms used here were reproduced photographically, enlarged by a factor of approximately 1.5, from polygons devised and published by Munsinger and Kessen (1964). They were constructed by a randomizing process described on page 4 of Munsinger and Kessen's monograph; variations in complexity are defined entirely by the number of turns (angles). Munsinger and Kessen had not used the polygons in pairs, and we thus had no prior information about preferences for the pairs we used. We assembled the pairs to represent various degrees of difference in complexity among the polygons available from this source. The pairs, specified by identifying the location of each polygon in the published illustrations of the monograph by Munsinger and Kessen, are as follows:

Pair 34: Complexity 5 vs. 10 (both from page 8: the second from the left, in the second row of 5-turn polygons, vs. the leftmost in the top row of 10-turn polygons).

Pair 35: Complexity 4 vs. 40 (both from page 7: the leftmost of the 4-turn, vs. the middle one of the 40-turn polygons).

Pair 36: Complexity 5 vs. 20 (both from page 8: the leftmost in the top row of the 5-turn, vs. the second from the left in the bottom row of the 20-turn polygons).

Pair 37: Complexity 13 vs. 31 (both from page 7: the rightmost of the 13-turn, vs. the rightmost of the 31-turn polygons).

Pair 38: Complexity 3 vs. 31 (both from page 7: the leftmost of the 3-turn, vs. the leftmost of the 31-turn polygons).

Pair 39: Complexity 20 vs. 40 (both from page 7: the rightmost of the 20-turn, vs. the leftmost of the 40-turn polygons).

Pair 40: Complexity 3 vs. 6 (both from page 7: the middle one of the 3-turn, vs. the middle one of the 6-turn polygons).

Pair 41: Complexity 10 vs. 20 (both from page 8: the rightmost in the bottom row of the 10-turn, vs. the rightmost in the top row of the 20-turn polygons).

SUBJECTS

The children who provided data for this study were obtained as subjects through three different procedures and we have calculated our results separately for the three kinds of samples that resulted. The three samples will be termed the U. S. Sibling Sample, the U. S. Non-Sibling Sample, and the Japanese Sample, and we will describe here how each of these samples was obtained. Each sample contained an approximately equal number of boys and girls, and we have decided to report results for the two sexes pooled; the Japanese sample suggested sex differences, but they were not duplicated in the U. S. sample, and the Japanese sample is not itself large enough to draw confident conclusions about sex differences.

U. S. Sibling Sample

In our previous studies of school children, it had been possible to study preferences in relation to age by studying the total population of individual schools at various grade levels. On the whole, the children of various grades in a single school are likely to be drawn from approximately the same population, or segment of the total society. Thus we can be reasonably confident that substantial changes in preference from one grade to another reflect changes with age in an otherwise similar group of persons, rather than differences among grades in the kinds of persons present regardless of age.

In the present study, we did not have available even this somewhat imperfect procedure for isolating age differences for study. Children too young to be in school were essential to the plan. The several kinds of organizations in which young children might be present and available as subjects (kindergartens, nursery schools, day care centers, etc.) provide no such opportunity as does a grade school

or secondary school for obtaining samples at different ages representative of substantially the same population.

We decided to cope with this problem by relying principally upon what we have called our Sibling Sample. Six different women served as assistants in collecting the data. Each was instructed to take as a special aim obtaining data from sets of siblings--pairs or larger sets--within the approximate age span of 3 to 8 years. Some of the siblings were obtained through the assistants' friends or relatives, and were interviewed entirely at home. Some sibling sets were obtained within single organizations--for example, a church or synagogue school which included some sets of siblings. In other instances, one child was interviewed through an organization and then, with the permission of the organization, arrangements were made to interview the child's sibling or siblings at home.

In this way we formed a sample consisting entirely of children who had at least one sibling within the sample. Comparing different age groups within this sample, then, we can have some degree of assurance that the average differences will be ones genuinely associated with age rather than with other kinds of distinction within the community. (Since our purpose was comparison of age groups, we did not include twins in this sample unless they had a sibling of different age in the sample also.) There is, of course, one obvious defect in this kind of sampling; it confounds age with birth order. But we thought birth order less likely to be a major influence on what we were studying than would be other variables whose confounding with age we avoided or reduced in forming the Sibling Sample.

U. S. Non-Sibling Sample

In the course of forming the Sibling Sample, an assistant interviewed children in various settings where groups of children were available. In some instances, it was only after interviewing a number of children in a group that she could even begin to determine which of them had siblings she was likely to be able to interview also. We decided in advance to establish another sample for our study, consisting of all the children whose preferences we could easily obtain while forming the Sibling Sample but who were not eligible to be in the Sibling Sample, either because they had no siblings at all, or no siblings of suitable age, or because we were unable to interview any of their siblings of suitable age.

This Non-Sibling Sample is one in which factors other than age are decidedly poorly controlled. In forming the Sibling Sample, on which we intended to depend principally, we had no reason to limit ourselves by strict rules about equivalence of routes of access to children of varying ages, and indeed the near-impossibility of following such rules with success was the basic reason for our seeking a Sibling Sample. To the extent that findings from the Sibling Sample are confirmed by the Non-Sibling Sample, we may believe them to represent

age trends so decisive that they are not covered up by the many other factors likely to be differentiating age groups in the Non-Sibling Sample. When a finding in the Sibling Sample is not confirmed by the Non-Sibling Sample, on the other hand, we do not need to be skeptical about the genuineness of its applicability to age differences when other important factors are controlled.

Japanese Sample

The Japanese sample is much smaller than either of the U. S. samples. It includes 11 boys and 16 girls aged 3 or 4; 18 boys and 17 girls aged 5 or 6; and 19 boys and 21 girls aged 7 or 8. No special procedure was available, as in the Sibling Sample, for narrowing this sample to improve age comparisons. The impression of the Japanese investigator and her assistant, on the other hand, was that the three age groups represented very similar segments of the community, an impression that the U. S. investigators decidedly did not have about the U. S. Non-Sibling Sample. Within the limitations provided by the small number of children and the lack of positive assurance of comparable sampling at different ages, we can tentatively consider the Japanese Sample as providing a basis for comparing age changes in the U. S. with age changes in a particular segment (which we might call upper-middle-class) of Japanese society in and near the capital city.

PROCEDURE

The interviews were conducted by several assistants, who were women with considerable experience, varied in nature, in dealing with young children. They were mostly conducted either in the child's home or in the school or other organization where he was encountered; a few, however, were conducted in the assistant's house or elsewhere. Generally, the interview was completed at a single session, which typically required something between 10 and 15 minutes. If there was any indication the child was tired or becoming unresponsive, the interview was completed on a later occasion.

The general procedure was to employ whatever approach seemed to the individual assistant useful in gaining the interest and attention of the particular child, in order to have him indicate his preference or greater liking within each of the pairs in the album. The pairs were presented in a standard order corresponding to the order of turning over pages in reading a book, and the position of the two pictures within a pair was constant throughout the study.

III. RESULTS

Pairs of Works of Art

We will report results set by set, with the sets labeled by the preference tendencies found in the earlier research on school children.

Set 1, Initial Strong Preference Disappearing or Reversing. The preference for the better picture in these pairs, strongest in the early elementary-school years in the previous study, is clearly present even at the preschool ages to which the present study extends. In the U. S. Sibling Group, where differences other than age are best controlled, the preference for the better picture in these pairs is at a peak at age 5, and it is very strong there, averaging 70%. Each of the four pairs shows at this same age the peak of preference for the better picture. Even at the younger ages of 4 and below 4 (i.e. 3 years, and a few children slightly under 3), the better picture is chosen by about 55% of the children, although one specific pair (number 12) provides an exception at both these earlier ages. The less well-controlled Non-Sibling Sample gives results which suggest the same pattern of preference reaching a peak at age 5, but the peaking and the later decline are less decisive in this sample. The smaller sample available from Japan strongly suggests a general slight preference for the better work in these pairs, through the age range studied, but there are no age changes regular enough to consider.

Set 2, Initial Indifference Giving Way to Rejection of the Better Work. For this set of pairs, the U. S. results, from both types of sample, indicate that at the earlier ages we are studying indifference is not complete; there is a fairly consistent, though not very large, tendency to reject the better work in several of these pairs. The Japanese data do not confirm this tendency; on the average, the better work is preferred by slightly over 50% of each of the Japanese groups.

Inspection of the pairs with this result in mind suggests to us that the relevant factor here may be the fuller or more realistic representational quality of the poorer work in each of these pairs. Though this feature is probably a more important influence on preference at later ages, it may still be of some minor importance at the youngest ages we have tested.

Set 3, Consistent Rejection of the Better Work. Both U. S. samples indicate that the better work in these pairs tends to be strongly rejected even at the earliest age we are studying. In the Sibling Sample only 28%, and in the Non-Sibling Sample, only 26%, of the youngest U. S. children (age under 4 years) choose the better work in the average pair of this set. There is a suggestion of continuing decline with increasing age. In the Japanese sample, only

38% of the youngest group prefers the better work, in the average pair here; the two older groups reject the better work more decisively, though not in quite as high a proportion as the U. S. children of the same ages. The sample sizes do not permit us to be confident of a real difference.

Inspection of the pairs in this set suggests that fuller and more realistic representation in the poorer work may again be a factor contributing to rejection of the better work, but accompanied here by other conspicuous variables differing from one pair to another. In Pair 6, where rejection of the better work is generally most decisive and overwhelming, the better work is very unhappy and subdued in color. In two of the other pairs, clarity versus confusion or blurring distinguishes the poorer from the better work.

Set 4, Consistent Preference for the Better Work. For the average of the five pairs in this set, response suggests indifference at the two lowest ages, four years and below four, followed by a rise in preference for the better work. Here is an instance, however, where the results differ markedly among the pairs. For pairs 8, 16, and 22 preference for the better work is found at even the earliest age we have studied. Looking at these pairs suggests that the younger children may be reacting to different aspects than are the older children. In pair 8 the better picture has much the stronger colors (more saturated and less pastelly); in pair 16, the better picture has much greater accuracy of representational detail. These features alone may lead the youngest child to prefer the better work, where the preference may then be sustained by other features which may together with these influence the choice of older children. In pair 22, the greater brightness and manifest happiness of the better work may especially appeal to the younger children, and other aspects may join with these at later ages. In pairs 2 and 19, on the other hand, the youngest groups show some tendency to prefer the poorer picture; inspection of the pictures does not give us any confident impression about why this should be.

The Japanese sample does not show a similar variation among the pairs in this set. For the average pair, there is little suggestion of preference at the youngest age, 3 and 4 years, where 52% choose the better work. While the percentage rises in the next age group (5 and 6 years) in girls, only in the highest age group (7 and 8 years) does it rise for the two sexes pooled. The preschool children do not so clearly in the Japanese as in the American sample demonstrate preference for the better work in pairs of this set.

Set 5, Initial Strong Rejection Disappearing or Reversing. In this set of pairs, rejection of the better work is a tendency already present in the youngest children we have now studied, but it is not as strong among them as it is in children of the early elementary school years. In our best controlled data, those from the U. S. Sibling Sample, the percentage favoring the better picture drops from 47 among those under 4 years of age to 23 among the 7-year-olds.

Table 1

Average Percentage Preference for the Better Work of Art, among Children of Each School Grade in Previous Study, in Art Pairs Used in Present Study

	School Grade											
	1	2	3	4	5	6	7	8	9	10	11	12
Set 1												
Pair 10	69	58	65	45	35	35	30	21	14	22	21	25
Pair 12	79	81	70	67	62	42	48	43	47	53	49	46
Pair 17	72	49	32	31	14	12	36	27	30	30	42	33
Pair 25	68	76	62	58	48	35	51	37	33	29	22	13
Mean	72	66	57	50	40	31	41	32	31	34	34	29
Set 2												
Pair 1	54	44	55	36	39	42	65	54	49	23	34	41
Pair 7	49	44	26	34	25	16	26	25	35	29	31	23
Pair 18	64	44	38	50	52	43	43	35	26	30	30	37
Pair 26	54	46	51	40	36	28	13	19	11	14	21	17
Pair 27	42	40	21	17	22	20	25	28	25	19	19	18
Mean	53	44	38	35	35	30	34	32	29	23	27	27
Set 3												
Pair 6	10	6	6	8	9	13	23	16	20	24	34	31
Pair 9	15	20	6	18	10	28	22	26	20	40	48	48
Pair 11	21	18	9	13	9	10	12	11	10	43	28	43
Pair 14	12	16	6	6	8	7	23	25	24	38	32	50
Pair 21	28	12	18	20	16	22	19	36	24	30	23	30
Mean	17	14	9	13	10	16	20	23	20	35	33	40
Set 4												
Pair 2	72	82	83	70	83	83	80	82	85	75	69	75
Pair 8	75	84	86	78	86	90	77	75	70	61	76	74
Pair 16	82	76	81	75	80	83	65	66	52	76	72	71
Pair 19	74	72	72	90	86	77	77	84	78	80	78	74
Pair 22	58	65	52	68	68	58	59	68	65	55	59	59
Mean	72	76	75	76	81	78	72	75	70	69	71	71
Set 5												
Pair 4	22	29	34	44	59	64	64	63	58	65	64	75
Pair 15	37	39	53	53	71	71	63	64	64	72	75	70
Pair 20	38	22	13	13	27	12	42	44	29	51	52	57
Pair 23	18	30	52	54	49	53	50	62	64	67	67	64
Pair 24	39	29	52	40	42	56	48	70	51	56	56	57
Mean	31	30	41	41	50	51	53	61	53	62	63	65
Set 6												
Pair 3	49	55	64	68	68	86	71	83	85	73	87	85
Pair 5	64	54	67	66	88	72	95	83	85	94	86	90
Pair 13	54	79	85	74	80	74	80	84	68	90	78	84
Mean	56	63	72	69	79	77	82	83	79	86	84	86

Table 2

Percentage Preference for the Better Work of Art, among Children of Each Age in Each of Three Samples in the Present Study

Sample	U.S. Sibling Sample						U.S. Non-Sibling Sample					Japanese Sample		
Age	<4	4	5	6	7	>7	<4	4	5	6	7	3-4	5-6	7-8
Number	56	46	37	43	30	33	27	41	23	21	30	27	35	40
Set 1														
Pair 10	55	54	73	42	43	28	52	59	44	48	70	44	34	37
Pair 12	45	44	70	58	60	52	33	37	52	43	63	67	80	80
Pair 17	55	63	70	63	60	28	59	56	57	48	53	59	51	55
Pair 25	59	59	68	63	53	52	52	81	87	62	70	59	71	65
Mean	54	55	70	56	54	40	49	58	60	50	64	57	59	59
Set 2														
Pair 1	50	48	35	35	30	28	41	63	57	43	47	59	66	60
Pair 7	46	50	60	65	53	52	52	49	61	52	43	56	66	45
Pair 18	61	50	46	49	53	38	37	44	48	43	47	44	57	73
Pair 26	34	35	30	44	50	45	30	37	30	33	50	41	43	58
Pair 27	45	41	46	40	47	41	41	42	48	38	43	59	54	40
Mean	47	45	43	47	47	41	40	47	49	42	46	52	57	55
Set 3														
Pair 6	21	20	5	2	3	14	26	7	9	19	17	41	14	10
Pair 9	21	15	22	5	7	21	15	17	4	14	13	15	17	10
Pair 11	39	50	41	37	33	35	15	32	22	38	23	44	29	50
Pair 14	20	20	14	9	10	14	33	27	22	10	0	44	37	13
Pair 21	41	30	30	37	40	28	41	32	52	38	33	48	49	53
Mean	28	27	22	18	19	22	26	23	22	24	17	38	29	27
Set 4														
Pair 2	43	46	41	77	80	66	52	44	70	52	50	52	49	55
Pair 8	59	65	70	74	83	86	59	71	70	67	70	48	49	80
Pair 16	68	61	73	56	73	55	52	51	57	71	83	48	34	38
Pair 19	34	37	68	70	83	66	33	56	48	48	60	56	69	60
Pair 22	79	65	51	63	63	41	67	66	70	57	50	65	46	65
Mean	57	55	61	68	76	63	53	58	63	59	63	52	49	60
Set 5														
Pair 4	43	48	38	58	40	35	48	54	30	43	50	37	40	15
Pair 15	45	41	30	16	13	35	48	34	26	19	23	15	17	10
Pair 20	34	20	22	23	7	35	37	37	22	33	23	59	49	38
Pair 23	43	37	24	30	20	24	48	22	30	62	33	41	14	20
Pair 24	68	59	57	37	37	69	44	56	52	29	67	63	51	30
Mean	47	41	34	33	23	40	45	41	32	37	39	41	34	23
Set 6														
Pair 3	39	52	51	37	37	52	44	42	22	33	57	52	60	38
Pair 5	54	61	78	79	93	93	41	44	61	71	90	59	63	72
Pair 13	54	63	60	67	83	69	44	56	70	67	83	44	63	63
Mean	49	59	63	61	71	71	43	47	51	57	77	52	62	58

The results are similar for the Non-Sibling Sample, except that the decline is not so great and the low point is at 5 rather than 7. For no age group in either U. S. sample is the percentage ever above 50; rejection of the better work is the tendency throughout. It is also in evidence throughout the Japanese data, where there is a steady decline from ages 3 and 4 through ages 7 and 8 in percentage choosing the better work.

Inspection of the pictures does not suggest to us any one feature responsible for the results. The poorer picture in each pair differs from the better in some ways likely to make it especially attractive to young children, but not in a consistent way. In pair 4, the poorer picture has sharper edges and greater contrast of hue and brightness. In pair 15, the poorer set of colored glass objects has greater variation of color and also greater wealth of detail. In pair 20, contrasting two Picasso paintings of young entertainers, the poorer picture has more in it to appeal, including a background of buildings and flowers, whereas in the better picture the human figures are accompanied by no props. In pair 23, the poorer work is marked by much greater saturation, and in pair 24 by greater ease of understanding and fuller representational detail. In the way in which these features enter here, then, they evidently have less consistent appeal for children under 4 than for children a bit older. In their response to some of these pairs, the youngest children resemble the older children of the previous study, but the underlying reasons appear to be different. The children under 4 have not yet come to notice dependably the features that may attract or repel them a year or two later; only much later will they develop the tendencies that may once more render them indifferent or even lead them to prefer the better picture in these pairs.

Set 6, Initial Indifference Giving Way to Strong Preference for the Better Work. Results in this set differ from pair to pair, according to whether the data for the youngest ages suggest only indifference or indicate instead a rejection of the better picture, so that the total change with age produces a reversal of preference, preference for the poorer picture eventually giving way to preference for the better picture. For Pair 3, the results strongly suggest, in both U. S. samples, a tendency to reject the better picture at some of the early ages, and to be indifferent at the others; a decided preference for the better picture, perhaps based on its more faithful representational realism, appears to develop only at ages beyond those sampled here. In the other two pairs, there is no clear evidence of preference for the poorer picture at any age, and a very marked preference for the better picture develops within the age range we are studying.

Non-Art Stimuli

Results for the two sets of non-art stimuli are presented in Table 3. No comparable data are available from previous study of older children with precisely these materials.

Table 3

Percentage Preference for the More Irregular or More Complex Stimulus in Non-Art Pairs, among Children of Each Age in Each of Three Samples in the Present Study

Percentage Preference for More Irregular Pattern

Sample	U.S. Sibling Sample						U.S. Non-Sibling Sample					Japanese Sample		
Age	<4	4	5	6	7	>7	<4	4	5	6	7	3-4	5-6	7-8
Number*	56	46	37	43	30	33	27	41	23	21	30	27	35	40
Pair 28	50	63	51	61	50	66	48	54	44	43	37	59	46	33
Pair 29	46	28	57	54	63	76	48	46	44	62	67	52	49	73
Pair 30	41	30	16	28	20	17	37	34	22	24	17	63	20	13
Pair 31	38	46	38	30	30	24	52	37	39	24	37	41	26	20
Pair 32	48	41	41	44	27	62	56	29	30	43	57	37	46	33
Pair 33	45	41	38	33	47	38	37	39	39	33	37	41	29	18
Mean	45	42	40	41	39	47	46	40	36	38	42	49	36	31

Percentage Preference for More Complex Polygon

Sample	U.S. Sibling Sample						U.S. Non-Sibling Sample					Japanese Sample		
Age	<4	4	5	6	7	>7	<4	4	5	6	7	3-4	5-6	7-8
Pair 34	59	59	49	51	53	48	52	49	48	33	53	48	63	55
Pair 35	38	44	51	72	80	79	33	54	52	76	67	37	69	53
Pair 36	34	44	57	67	83	86	44	56	52	62	70	41	60	60
Pair 37	59	72	65	70	73	76	52	37	57	52	83	37	71	68
Pair 38	46	57	60	61	70	76	59	46	30	52	60	30	43	40
Pair 39	45	44	43	72	80	76	56	39	70	71	70	63	60	60
Pair 40	43	48	41	56	60	72	30	46	39	76	50	37	49	53
Pair 41	63	52	49	56	60	55	56	51	39	43	63	44	46	38
Mean	48	52	52	63	70	71	48	47	48	58	65	42	58	53

*The numbers of cases apply to the lower part of the table as well as the upper.

Patterns Differing in Regularity. There is very little suggestion of age changes in response to the pairs contrasting a more regular with a more irregular pattern. Both U. S. samples do show greater preference for the regular pattern, on the average, at age 5, with an approach to indifference at both earlier and later ages. This tendency in the average is not, however, of very large magnitude and it is not constent enough from one pair to another to provide any very persuasive basis for generalization. The smaller body of Japanese data suggests a different pattern: decided preference for the irregular pattern in the upper age groups (5 to 8), preceded by indifference in the youngest age group (3 to 4). Here, too, the variation from pair to pair is rather large for drawing any very definite conclusion.

Polygons Differing in Complexity. The results for pairs of polygons differing in complexity are the most regular results for any set of stimuli, in approaching uniformity of age trend for the several samples of subjects and for the several individual pairs of stimuli. The general tendency is for indifference at the earliest ages to be replaced with increasing age by clear preference for the more complex polygons. Even here, however, uniformity is not perfect; two pairs, numbers 34 and 41, show little sign of change in preference with age. And some of the other pairs show at the early ages a definite preference for the simpler polygon, rather than the indifference suggested by the average. Early preference for the simpler polygon is most consistently indicated for pair 40.

The Japanese data, while they are in accord with the general tendency shown in the American data, would not by themselves provide any adequate basis for conclusion, because the preference differences among age groups are not very large in the Japanese sample.

IV. SUMMARY AND CONCLUSIONS

When asked, in previous studies of children's preferences, to choose between two works of art experts consider to differ in esthetic quality, elementary-school children were generally found to have less decided preferences than secondary-school children. In some particular pairs of pictures, however, a more decided preference--sometimes for the esthetically better work, sometimes for the poorer--was found in the elementary schools than in the secondary schools. And in still other pairs, a preference for the one or the other work was fairly constant in magnitude throughout the school years studied.

The present research is an exploration of the early part of these developmental trends, extending their study to younger children. The earlier research depended on group procedures administered in the classroom; these procedures can not be relied on with all children of the first grade, and are not applicable to pre-school children. To explore the younger ages, group procedures must be replaced by individual procedures, and because the research thus becomes much more costly the

exploration is on a restricted scale. Our exploration uses six sets of pairs, chosen to represent distinct developmental trends in school children's preferences as determined in the earlier study.

Of special interest are the two sets for which in the previous study preference had been most pronounced at the earliest age studied. In Set 1 the elementary-school children strongly preferred the better picture, and in Set 5 they strongly preferred the poorer picture; both preferences tended to disappear or even be reversed in secondary school. When procedures were used that are applicable to younger children, would the results correspond to an extrapolation of the previous findings, the preference found for each set being even stronger in pre-school children? We did not find this to be true. For each set, the preference expressed by elementary-school children was found in our pre-school children also. But the preference was not particularly strong in our present data. (Both the change of procedure, and the possibility of the statistical artifact known as regression effect, make useless precise comparison between the results of this study and of the previous one.) More importantly, there was no indication that within our present data these preferences were strongest at the earliest ages.

Next in interest are the sets where the earlier study had indicated that a strong preference is maintained consistently throughout the years of elementary and secondary school. In Set 3, the poorer work had been consistently preferred, and in set 4 the better work. Using a procedure adapted to younger children, would we find that these preferences are strongest at the earliest ages? We did not. In Set 3, where the poorer works are preferred in all the school grades we studied earlier, the poorer works are found to be preferred by our present subjects also. But during the years from 3 to 7 we find the rejection of the better work, or preference for the poorer, to be gaining rather than losing strength; the peak of preference for the poorer work is certainly not found at the youngest age we have studied. In Set 4, where the better works had been preferred in the previous study, the outcome is similar; that is, the preference is weaker at the earliest ages we are now studying than at the later ages. For some of the pairs of Set 4, in fact, preference for the better work seems to be completely absent at the ages of 3 or 4.

Finally, we have two sets of pairs where the previous study had indicated indifference among the younger grade-school children, giving way with increasing age to a strong preference for the poorer work in Set 2, and to a strong preference for the better work in Set 6. In the present study, using procedures better adapted to young children, we find in Set 2 that at all ages our American children share to some extent the older children's preference for the poorer work. In Set 4, in some pairs the youngest children in the present study show genuine indifference, but in others they show actual preference for the poorer work, despite the strong preference of older children for the better.

In general, younger children show more tendency to foreshadow older children's preference when that preference is for the esthetically

poor than when it is for the esthetically good. In neither case, however, is children's preference at a peak at the ages of 3 and 4.

In their response to works of art, then, our evidence suggests that agreement among children, when it appears, is an outcome of gradual developmental processes through which children become able to grasp important and often complex aspects of the art, and then may resemble each other in their feelings about these aspects. Agreement in response to works of art does not appear to be a product of innate human nature, greater in degree the less that innate human nature has been distorted by pressures from the environment.

Our smaller exploration of preferences in response to two sets of non-art stimuli suggests similar results for the particular sets of stimuli we chose to work with. Preferences are not very decided at the youngest ages we considered, and tend to become more marked with increasing age. Here too there seems to be no strong preference tendency set by innate human nature, and marked agreement--where it appears at later ages--seems likely to be an outcome of complex developmental processes.

The comparison between U. S. and Japanese data suggests general similarity, though there are suggestions of differences which might prove stable if explored further with larger samples.

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